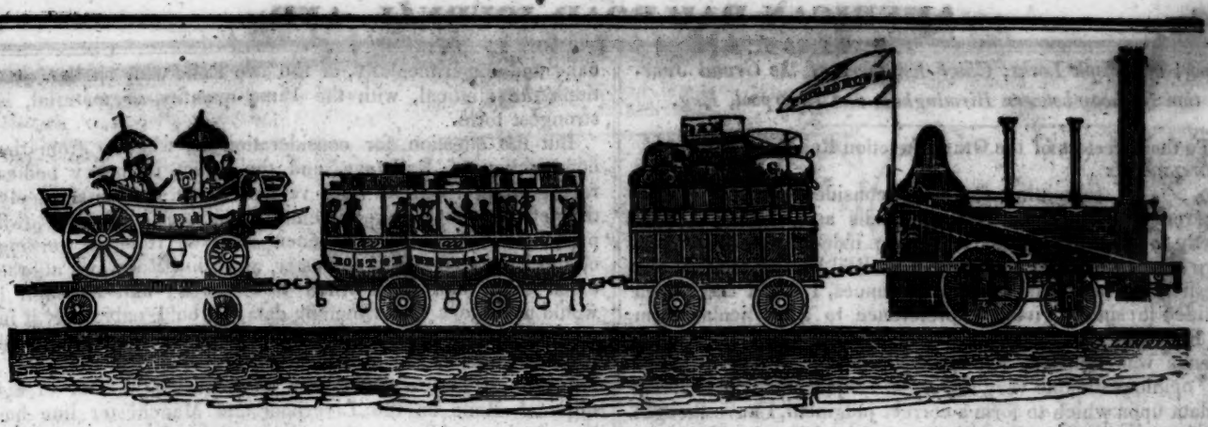

AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.] SATURDAY, AUGUST 15, 1835. [VOLUME IV.—No. 32.

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AMERICAN RAILROAD JOURNAL.

NEW-YORK, AUGUST 15, 1835.

Grand Junction Railway.—We devote in this number almost the entire space usually devoted to internal improvements, to the Report of Joseph Locke. It will be found worthy of an attentive perusal. We are indebted to the Directors of the New-York and Erie Railroad Company for a copy.

New-York and Erie Railroad.—We would call attention to the proceedings of the Railroad Convention held at Oswego, published in this number of the Journal. It was well attended, and attended, too, by delegates from *Oneida* county — from whence came much of the opposition in the last Legislature. That "truth is mighty and will prevail," in this, as in most other important matters, we have never doubted; and it is truly gratifying to those who look at, and advocate, this as a *national* work, to learn that there are daily and important conversions to its cause from its former opponents.

Troy and Ballston Railroad.—We learn, by the Ballston Gazette, the Railroad from the city of Troy to that village is so far completed, that the new engine with a train of passenger cars will arrive there on Thursday or Friday from Waterford. Thus it is that one railroad after another is brought into use; and it will not be many years before the mode of travelling on *all* the great thoroughfares will be by *railroad* and steamboat.

Pittsburgh.—The river is three feet above low water mark.

[*From the Oswego Palladium.*]

Commerce of Oswego.—We lay before our readers the following statements obtained from the Custom House, relating to the navigation and commerce of the port of Oswego. We simply remark that these statements exhibit only the business of the port as connected with the navigation of the Lakes, and exhibit nothing of the immense increase of business connected with the Oswego and Erie Canals.

Second quarter of 1835.

	Tons.
American vessels entered from foreign countries	13,140
" " cleared for do do	12,572
" " entered from ports of the United States	18,231
" " cleared for do do	19,792
	63,735
Foreign vessels entered from foreign ports	23,041
" " cleared for do do	23,103
	46,154
Total foreign and domestic entries and clearances	109,879

Amount of duties collected, $14,210 64.

On comparing the transactions of the Custom House for the above quarter of the current year with the corresponding quarter of the year 1834, we have arrived at the following results, which we state in round terms:

The increase of American tonnage clearing for and arriving from foreign ports, is nearly 1500 per cent.

The increase of foreign tonnage arriving from and clearing for foreign ports, is 39 per cent.

The domestic entries and clearances for the 2d quarter of 1834, cannot conveniently be ascertained—but the increase for the corresponding quarter of the present year is known to be very great.

The increased amount of duties collected is nearly 1200 per cent.

The increased amount of imports is nearly 600 per cent.

And the increased amount of exports exceeds 700 per cent.

We have not now schooners enough to do the business of our lake, and there is every reason to believe that we shall have double the business next year that we have this. Where shall we find vessels to do it? Every schooner now which is well managed clears from fifty to one hundred per cent. on her cost yearly. No better investment can be made. We have timber in abundance—and when the business is such that they will pay for themselves every year or two, why can we not have a sufficient number to do all the freighting that may be required by the commercial operations of our lakes.

The Boston and Providence Railroad.—Increased facilities to travellers are afforded by the new arrangement of running three times a-day over this road. The change of hour to four o'clock, P. M., for the departure of the New York steamboats from Providence, will be found, it is thought, convenient to passengers from Boston, who may then take an early dinner in that city, and arrive here the next morning before business commences.

In the deep cut of the Chesapeake and Delaware Canal, a slide took place, during the recent rains, which will, says the National Intelligencer, entirely obstruct its navigation, for some time to come, and cost a large sum to remove. The Baltimore American, however, of yesterday, says the damage is not so great, and that two sloops had since passed through.

Several of the steam carriages of the British and American Intercourse Company have been running in the vicinity of town this week, in particular from Hyde-park-corner to Slough, which (21 miles) is regularly done in an hour and 20 minutes.—Among the passengers have been Lord Darlington, Sir Hussey Vivian, Sir John Elley, Sir Henry Hardinge, Sir John Lambert, Sir Charles Dance, Colonels Grove and Thornton, Major Handley, M.P., and Mr. Cayley, M.P.

Steam Carriages.—Some of the members of the committee of the House of Commons now sitting, on steam carriages, having expressed a wish to be enabled to judge for themselves as to the practicability of a power so long suspended by legislative prohibition, in the shape of tolls, were invited a day or two since by Col. Sir Charles Dance, who is just returned from the continent, to accompany him in his steam-carriage on a trip to his house at Hartford, near Stanmore. The invitation being accepted, the carriage started with a party from Oxford street, at half-past nine in the morning. At Hartford a *dejeune* was provided by the care of Sir Charles; after partaking of which, and witnessing some experiments in drawing heavy weights by a steam-carriage, (with a view to military purposes,) the party set off on their return to Oxford street, which they reached at half-past twelve, having accomplished the distance in forty-five minutes. On the journey out, the carriage went up Stanmore hill at the rate of eight miles an hour, although this is an ascent where the mail and stage coaches generally make use of six horses. Besides Lord Darlington and other members of the committee, the Master General of the Ordnance and several other distinguished persons were of the party.

Respect for the Arts.—A Danish fifty-gun frigate has arrived at Leghorn, to take on board and convey to Copenhagen a part of the finished works of Thorwaldsen. The artist himself intends to go to Copenhagen during the summer, in order to be present when they are put up in the places for which they are intended.

Report of Joseph Locke, Chief Engineer of the Grand Junction Railway between Birmingham and Liverpool, Eng.

To the Directors of the Grand Junction Railway Company.

GENTLEMEN:

In submitting for your consideration the following remarks on the subject of Rails and Chairs, I wish briefly to state the reasons that have induced me, (after you have already decided on the form of Rail,) to investigate the question. Under ordinary circumstances, I might have been justified in simply giving a preference to a particular form of Rail, without stating the grounds on which that preference was founded, but considering the present conflicting opinions on this very important subject, and the scarcity of data upon which to form a correct judgment, I have thought that by contributing the few observations I have made to the general stock, the cause in which you, as well as the public, are interested, might be advanced.

The longitudinal and transverse forms of Rail, the form of Chair and fastening, and the propriety of placing the Blocks further apart, are the subjects to which I have more particularly directed my attention.

The fish-bellied or eliptical form of Rail is already well known. It is deepest in the middle between the supports, and the material is so disposed that when uniformly loaded it is equally strong at all points.

The parallel Rail, on the contrary, is weakest in the middle, and, if loaded excessively, would break midway between the supports; and as it is absolutely necessary to give the requisite strength in the middle, it follows that at every other part the parallel Rail is unnecessarily strong.

The strength of a uniform bar of iron is as the breadth and square of the depth directly, and as the length inversely. In other terms, if the breadth be doubled, its strength is doubled; if the depth be doubled, the strength is quadrupled; and if the length or distance between the supports be doubled, then the strength is impaired one half.

If an eliptical Bar be 3½ inches at the least, and 5 inches at the greatest depth, a parallel Bar of equal weight will be about 4¼ inches, and the relative strength in the middle, (supposing the breadth and distance between the supports to be constant,) being as the square of the depth, will be as 25 is to 18.

This advantage, however, is only gained at one point, viz. midway between the supports; and it gradually diminishes, until it corresponds in depth with the parallel Bar, which, when the supports are 3 feet apart, is at 9 inches from the end, and at this point the two Rails are equally strong: but for the remaining distance to the support, the parallel Bar is the strongest.

I am aware that, theoretically speaking, the extra strength of the parallel Rail near the ends is of no advantage, because, as has been well observed, the efficiency of a structure can only be estimated at the weakest point,—but I wish that circumstance to be noticed, as I shall have occasion hereafter to direct your attention to it.

The formula for ascertaining the strength of iron beams are derived from experiments made upon peculiar sections, and with various kinds of iron. Some experiments have recently been made at Newcastle, on the strength of Railway Bars, and these therefore are more applicable to our purpose than any others, although they are not altogether free from objection. The deductions, which I think are very fairly drawn from these experiments, are,

That an eliptical Rail weighing 45 lbs. per yard is equal in strength to a parallel Rail weighing 50 lbs. per yard.

That when a weight of 96 cwt., was applied in the middle, with 3 feet bearings, the deflexion in the former was 1-20th of an inch, and in the latter 1-14th part of an inch,

The depth of the fish-bellied Rail in the middle was 5 inches, and at the end 3½ inches. The depth of the parallel Bar was 4 inches.

Now if the two Rails had had similar sections, the parallel Bar ought to have been 4½ inches deep, instead of 4 inches, and would have been 1-8th stronger.

However, I think there can be no doubt that, both theoretically and experimentally, of the two Rails with similar sections, the eliptical, with the same quantity of material, is strongest form.

But the question for consideration is, whether from the construction of Railways, and the effect of heavy bodies rolling along them at high velocities, we can safely apply theoretical or even experimental deductions? For my own part, I think that the experience obtained from the working of the Liverpool and Manchester, and other Railways, affords much safer data upon which to proceed; and although I would not reject experimental data, I would only apply it in connection with the more generally practical results obtained from these lines.

It is well known that a very considerable number of the eliptical Rails on the Liverpool and Manchester line has been broken, whilst on those lines where the parallel Rails have been used, there are few instances of a broken Rail. The causes that have led to this unexpected result will hereafter be considered.

By far the greater number of Rails have broken at about 7 or 8 inches from the Block, and, in nine cases out of ten, at 7 or 8 inches from the joint Block, or end of the Rail. This circumstance has induced a belief that the Rail is not of the true eliptical form, but that it is weakest at this point; it will, however, be found that the point where the greatest deviation from the eliptical form occurs, is not that at which the fractures have generally taken place.

The Rails used on the Liverpool and Manchester Railway weigh 35 lbs. per yard—the greatest depth is 3½, least depth 2½; now, the effect of any weight at different parts of the Rail is as the rectangle of the segments into which it is divided. If therefore it be necessary to have a 3 feet Rail, 3½ inches deep in the middle, the depth at nine inches from the end will be as $18^2 : 8\times28 :: 3\frac{1}{2}^2 : 2{\cdot}91^2$ inches; but the actual depth is 2·94 inches, therefore it is at this point about 1-30 of an inch too deep. The calculated and ascertained depths at other parts of the Rail are:

	Calculated depths.	Actual depths.
At 6 inches from the end,	2·60	2·76
7	2·77	2·85
8	2·91	2·94
9	3·03	3·02
10	3·13	3·10
11	3·22	3·20
12	3·29	3·30
13	3·36	3.36
14	3·41	3·40
15	3·45	3·44
16	3·47	3·46
17	3·49	3·49
18	3·50	3·50

Thus we find, that up to 9 inches from the end the Rail is stronger than theory assigns, whilst from 9 inches to 12 it is a little weaker, but in so small a degree as not to be worth considering. The depth of the Rail, at 9 inches from the end, is equal to the depth due to a parallel Rail of the same weight per yard. And if the Liverpool Rails had been parallel instead of eliptical, and of the same weight, the fracture, instead of being near the end, would, according to theory, have been in the middle, and the number of broken Rails increased in the proportion of nearly 2 to 3. There have been no parallel Rails exactly of this weight made; therefore, whether this proportion would hold true in practice remains undetermined. If, however, a parallel Rail had been used, as deep in the middle as the eliptical Rail now is, viz. 3½ inches, its weight would have been about 42 lbs. per yard, and the number of broken Rails ought to have been the same, the point of fracture only being changed.

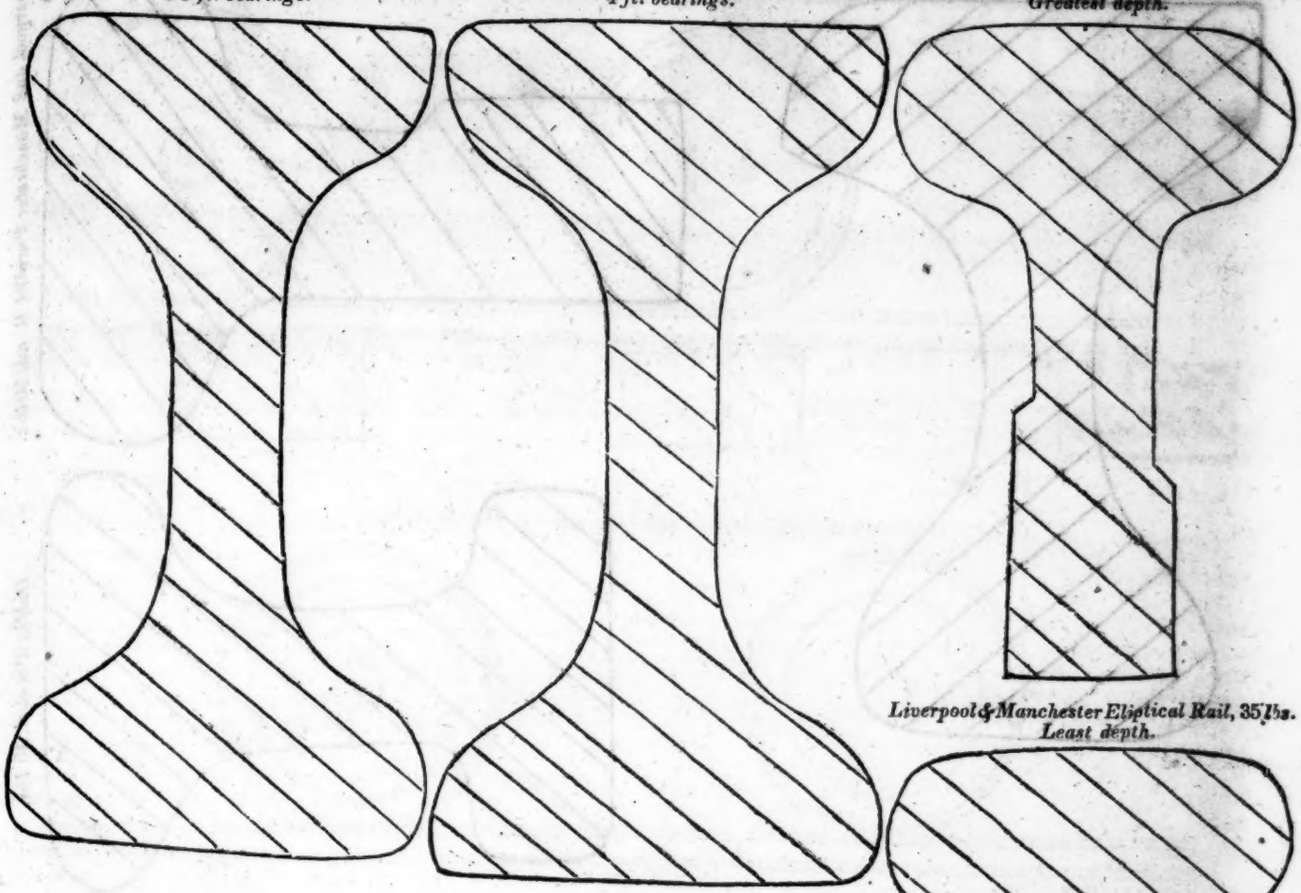
This reasoning, theoretically speaking, would be conclusive, had we not the experience of the Bolton, Wigan, St. Helens, and part of the Liverpool and Manchester Railways, wherein such Rails have been used, and where very few have yet been broken.

These Rails weigh 41¼ lbs. per yard and are 3¼ inches deep. May we not therefore fairly conclude that experience does not bear out the theoretical advantages of the eliptical Rail?

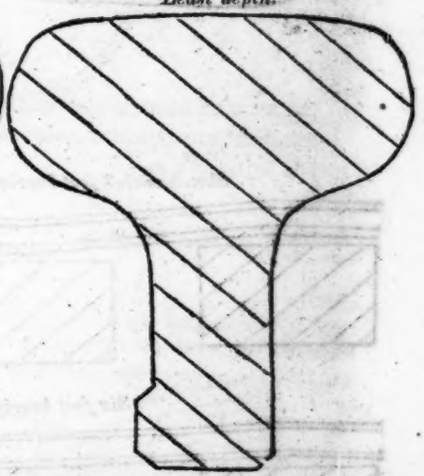
Present Grand Junction Railway, 3·9 ft. bearings.

Proposed Grand Junction Rail, 4 ft. bearings.

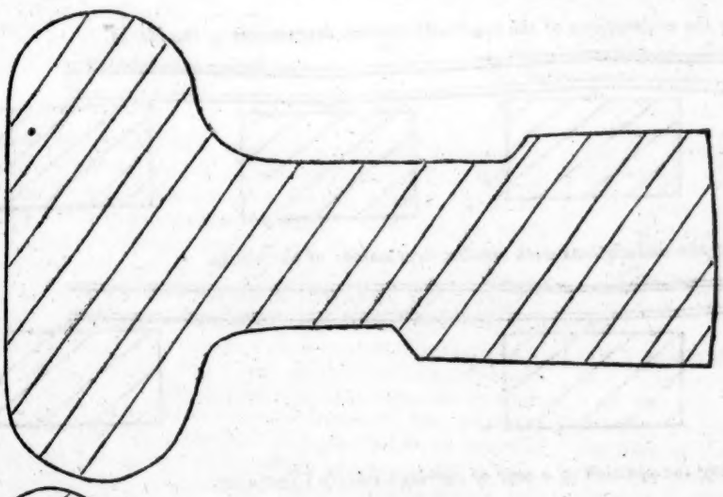
Liverpool and Manchester Eliptical Rail, 35 lbs. Greatest depth.



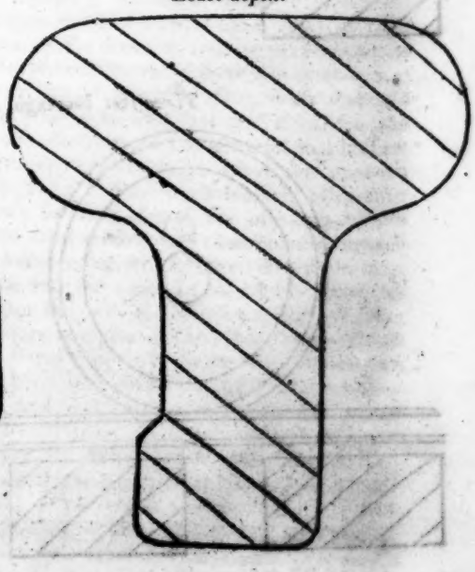
Liverpool & Manchester Eliptical Rail, 35 lbs. Least depth.



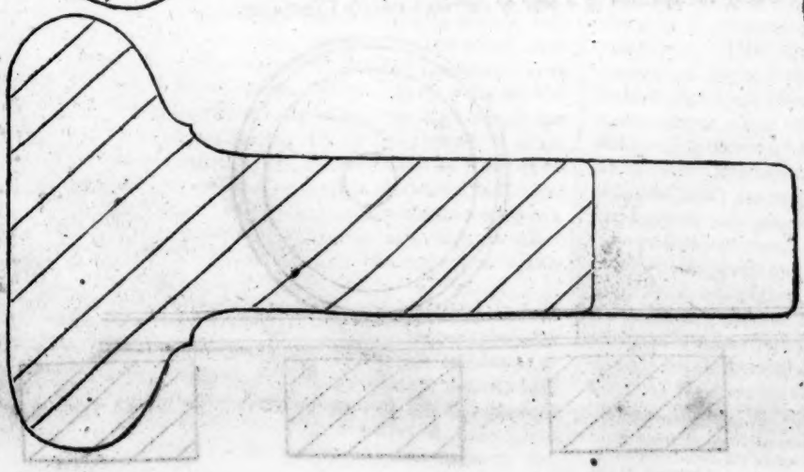
Liverpool and Manchester Eliptical Rail, 50 lbs. Greatest depth.



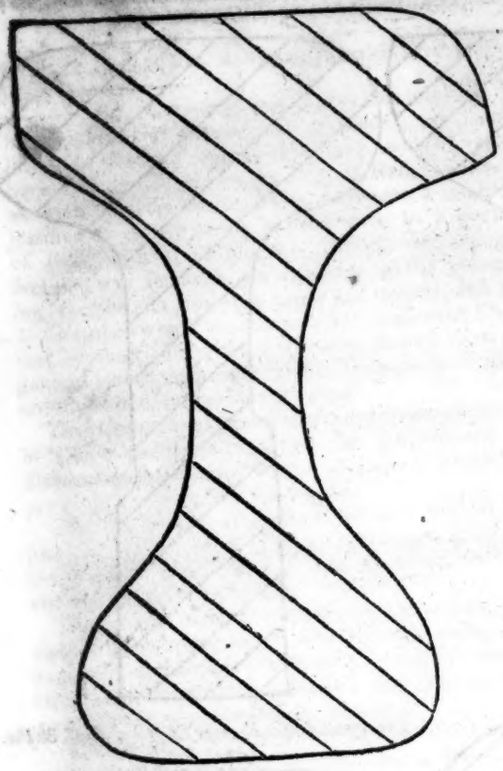
Liverpool and Manchester Eliptical Rail, 50 lbs Least depth.

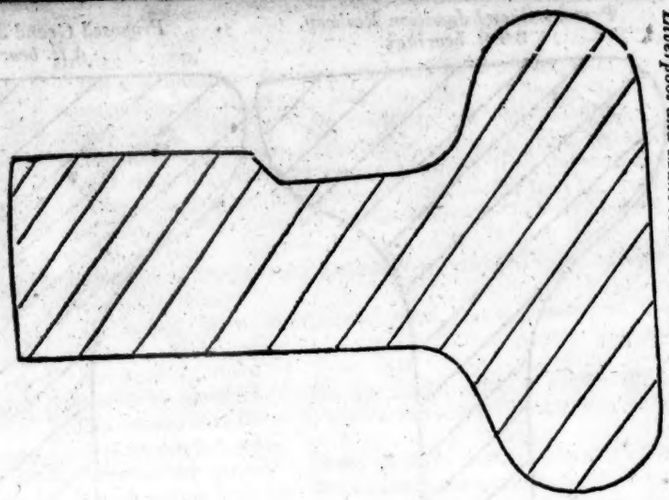


Mr. Stephenson's Eliptical Rail, 44 lbs.

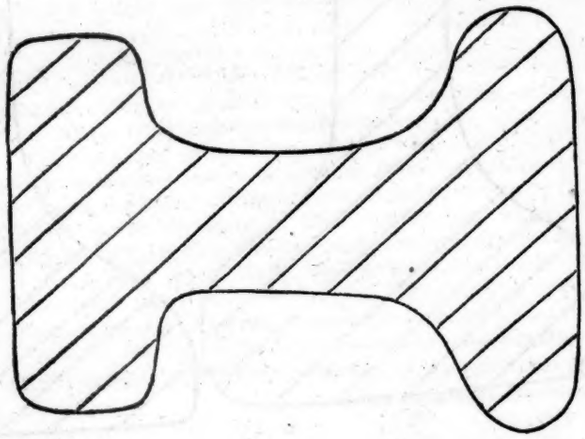


Liverpool and Manchester Parallel, 60 lbs.



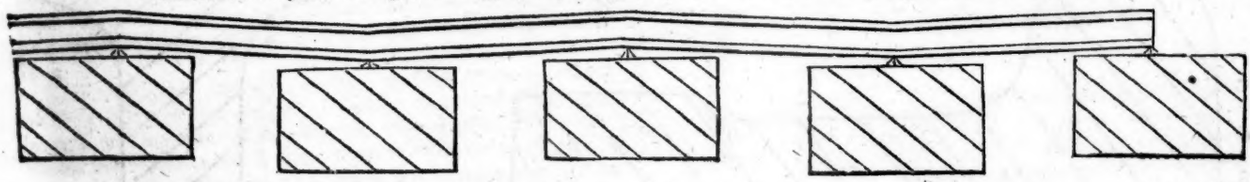


Liverpool and Manchester Parallel R ail, 50 lb s.

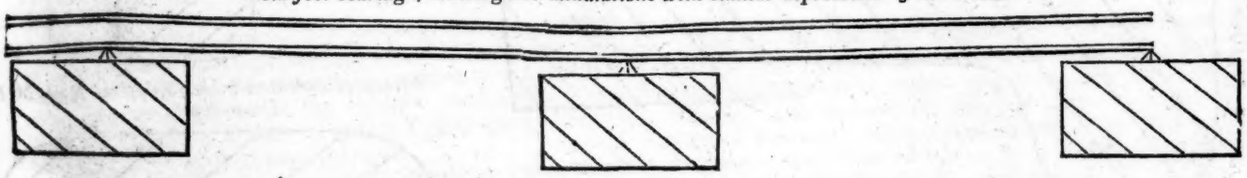


Dublin Parallel, 45 lbs.

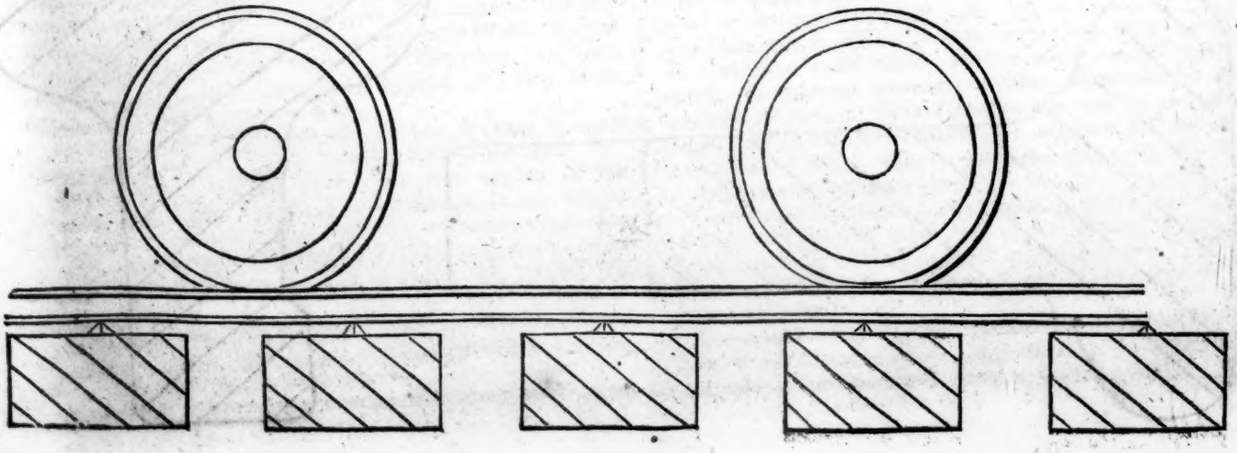
Sketch with 3 feet bearings, showing the undulations of the road with certain depressions of the blocks.



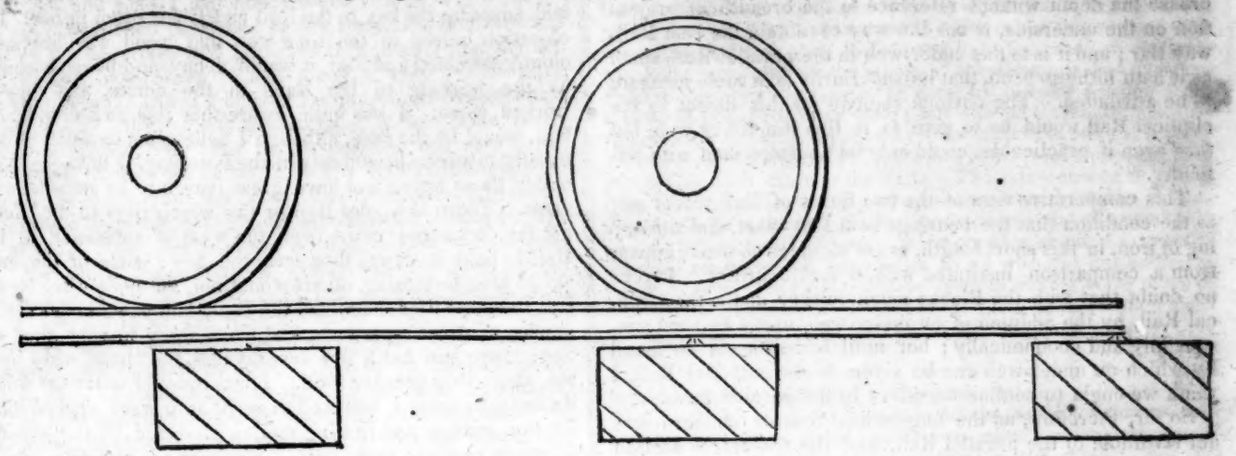
Six feet bearings, showing the undulations with similar depressions of the blocks.



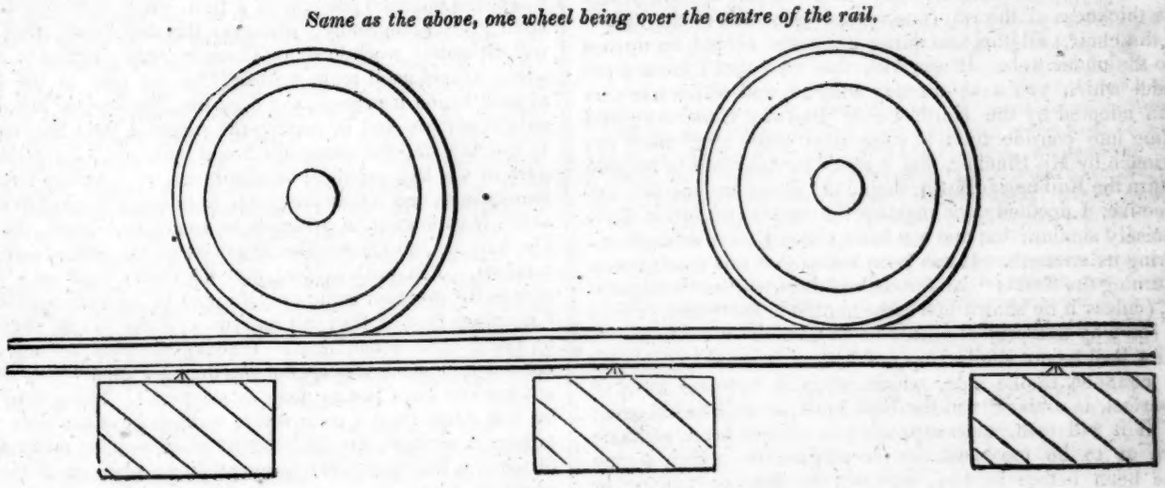
Three feet bearings, showing the positio^{n} of a pair of carriage wheels 7 feet apart.



Five feet bearings, showing the position of a pair of carriage wheels 6 feet apart, one wheel being over the block.

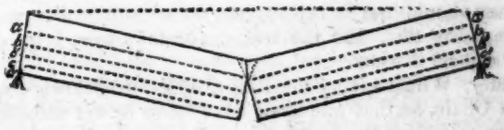


Same as the above, one wheel being over the centre of the rail.



The chief causes of failure may, in my opinion, be traced to the defect in fastening the Rail into the Chair, and the difficulty of preserving the uniform level of the Blocks. An attentive consideration of the effect of a heavy body moving along a railway will sufficiently prove this. From the unequal settling or subsiding of the ballast, the level of the Blocks becomes unequal, and so soon as one becomes lower than its neighbors, every wheel that passes over it strikes a blow and drives it lower. The force of this blow depends on the depression of the Block, which not unfrequently exceeds half an inch. When this occurs, the weight of the load is alternately thrown to the inner edges or arrises of the adjoining Chairs; and thus not only is the weight thrown on one side of the Block, but a considerable strain is given to the longitudinal key. In some cases there is an alternate action, first on one side of the Block and key, and then on the other, thus producing a rocking motion to the Block, which very soon alters its level, and to the key a fretting motion, which soon shakes it loose. When the latter is accomplished, the Rail which has very little substance at the bottom is liberated; and it is then, and I believe not till then, that the Rails break, for it has been well ascertained that a beam, fastened at the ends, will bear nearly double the weight that will break it when the ends are loose. And this view is confirmed by the fact, that, in nine-tenths of the Rails hitherto broken, the fracture has taken place near to the ends.

Another cause of the failure of the fish-bellied Rail arises from the want of an under-web. It is well known that the strength of beams is increased by adding to the substance at the bottom, and this increase will be found to be much more important when the Rail is subjected to blows, rather than to weights laid or rolled smoothly along its surface. The fibres at the bottom of a beam are more strained than those in the middle, because they lie at a greater distance from the neutral axis.* This will be best understood by a reference to



the drawing above, where a fractured beam is represented. The line *a a* represents the neutral axis; the lines *b b*, *b′ b′*, &c. the position of the fibres of iron or other material dividing the beam into several pivots. Now the extension of the fibre at *c′ c′* is to that of any other fibre as its distance from the neutral axis, and it follows that at *c′ c′*, where the distance is greatest, the elasticity of the material will be first destroyed. This, therefore, is the point where the greatest number of fibres is required, and more particularly to resist a sudden shock, or blow; for, in this case, the elasticity of the lower fibres might be destroyed before those placed nearer the neutral axis had been called into action. The same may be said of the fibres above the neutral axis, which resist by compression; the upper fibres of the Rail being further from the neutral axis are more compressed than those below them. The position of these fibres may be compared with the bundle of sticks in the fable: place them in such a manner as to allow them to act together, and they will resist the load, but take them singly, and each will break. A deep narrow bar is certainly the most rigid, but, (as Tredgold has well observed,) although it will bear an immense pressure, the stroke of a hammer will fracture it.

* The neutral axis, or axis of motion, is in that part of a beam where all the fibres above it are compressed, and all those below are extended. It is situated above the middle, but varies in differently shaped beams, and with different qualities of material.

This view of the subject leads to the conclusion, that to increase the depth without reference to the breadth of projection on the underside, is not the way to obtain the best Railway Bar; and it is to this under-web in the parallel Rail, small as it hath hitherto been, that its superiority is in some measure to be attributed. The obvious remedy for this defect in the eliptical Rail would be to give to it this projecting web, but this, even if practicable, could only be accomplished with difficulty.

This comparative view of the two forms of Rail refers only to the condition that the bearings be 3 feet apart, and the saving of iron, in this short length, is not so much as would appear from a comparison instituted with 6 feet bearings. I have no doubt that with the Blocks much further apart, the eliptical Rail, by the addition of an under-web, might be used successfully and economically; but until some means be found by which an under-web can be given to the eliptical Rail, I think we ought to confine ourselves to the parallel form.

So far, therefore, as the longitudinal form is concerned, I am favorable to the parallel Rail, and the transverse section which I would recommend is that in which, after allowing sufficient width for the carriage wheels to roll upon, a moderate thickness of the rib, (due regard being had to the height of the chair,) all the remaining substance should be thrown into the under-web. It was with this view that I formed the model which you have already adopted, and which has also been adopted by the North Union Railway Company; and taking into consideration a suggestion made after much experience by Mr. Sinclair, that it would be desirable to be able to turn the Rail upside down, should the upper surface become defective, I decided upon making the upper and lower Rails precisely similar; but this has been accomplished without impairing its strength. It has been stated that this contingency of turning the Rail is "dangerous, and done without foresight;" but, (unless it be shown that some benefit is sacrificed,) I cannot see why this project should be so named.

If a Rail be not similar, top and bottom, it is evident that we are confined to one side, which, when it becomes worn or imperfect, is useless, and the Rail must be sold as old iron; but if it will turn, even supposing it to have been so much worn as to be too weak for the purposes to which it may have been before applied, may still be used on sidings, or branch lines, where the engines are lighter, or the speed not so great. That there is an advantage in being able to turn a Rail, even to make choice of sides, when first laid, is well known to those who have laid them, and therefore this contingency should not in my opinion be so totally disregarded. In preparing this, and the model for the chair, I have had three objects in view.

Firstly, Whilst giving the Rail a sufficient bearing surface on the Chair, so that one shall not groove or cut the other, I propose to reduce the length of the bearing at least one half, by which the tendency to rock the Block, and tear off the Chairs, will be reduced 50 per cent.

Secondly, To prevent the Rail from rising in the Chair, which is proposed to be accomplished by the large projection on the Rail, the filling piece, and the wooden key: which, so long as either of the latter keep their places, will prevent the Rail from lifting up.

To prevent or lessen the liability of loosening the key, I propose,

Thirdly, That the filling piece shall only touch the Rail for one inch on each side of the centre of the Chair, instead of two inches, as heretofore; so that by any flexibility of the Rail, or settling of the Blocks, the action on the key will be reduced 50 per cent., and that continual fretting or tremor, which is so prejudicial to the long iron keys now in use, will be abated in the same proportion.

The joint Chair has two filling pieces and two keys, the object of which is to insure a more certain hold of both Rails, and which cannot be done by one key. Each key acts independently of the other, and therefore any working loose of one Rail does not necessarily, as at present, liberate the other.

I may here be permitted to make an observation on the wooden key. It is upwards of 8 months since you instructed me to try an experiment with wooden keys on the Liverpool and Manchester line, and I caused about 100 yards to be laid, adapting the key to the Rail and Chair when in use. The objection raised at the time was, that wood was not sufficiently durable, and that it would decay and become chafed by the working of the Rails in the chairs, and thus be worked loose. I was quite aware that this, to a certain extent, would be the case, although I believe not so much as materially to affect the stability of the fastening. I have just examined these keys, and have great reason to be satisfied with them. There is a joint Rail or two which rises in the chair, but this is caused more from the want of substance in the Rail to hold it down, than from the key; some of the keys would bear tightening, others would not, but none were loose; I at the same time examined the Rails laid down under the direction of Mr. Stephenson, and found them in very good order; there are but a few lengths laid, but these were upon the whole very firm and solid. I was induced to try the wooden keys, because I believed those of iron were worked loose by the jarring and fretting motion produced by the passage of every carriage over them. There is not sufficient elasticity in iron thus applied, to yield or adapt itself to the strain which the changed position of a Rail, when deflected, throws upon it, and, therefore, wherever this evil exists, iron keys will ultimately work loose. There is more yielding in wood, which adapts itself more uniformly to the side of the Chair against which it presses, and does not, like the iron key, touch only in points; and by making the recess in the Chair smaller in the middle, and using the wood quite dry, the projecting part of the key expands, by absorption of moisture from the atmosphere, and is thus prevented from being worked or drawn out. It is similar in principle to a cork in a bottle, the middle part of the Chair, like the neck of the bottle, being the smallest. It is quite evident, that the decay from long exposure to the weather is the only thing to be guarded against, but I maintain that, if they but last two or three years, they will be found to be economical. Wooden sleepers are not more durable than stone Blocks, but still they are used. Why should not wooden keys last as long as sleepers? There must also be less noise from a train where wooden keys are used; the reason is obvious, for the substitution of a softer material between the Rail and Chair prevents the vibrations of the former from being communicated to the latter.

The successful application of wood for keys is very important, and I regret that these keys were not practically tested when I first suggested them, (now upwards of two years since,) but I shall continue to watch the operation upon that part of the Liverpool line now laid with them, so that we may yet take advantage of any change that time may produce.

I come now to consider the propriety of placing the Blocks at a greater distance from each other.

The reasons that have induced me to recommend this to your consideration are not strictly confined to economy, (although I shall be able to show some advantage on that score,) but to a conviction that much of the wear and tear, not only of the Rails and Chairs, but of the engines and carriages, will be avoided. There is one point to which I wish to direct your attention, viz.: That so long as the Blocks are not placed further apart than the axles on the carriages, no more weight can ever at one time be placed on one Block; and therefore the Blocks do not by this suggested change require to be larger, nor the foundations to be firmer, than they are at present. An inspection of the drawings will render this apparent.

If a carriage bear upon each wheel a load of 3 tons, it presses when immediately above the Chair with that weight upon the Block. The Block and the foundations should therefore be prepared to resist this load; now, if the Chairs were placed 2 feet apart, or the Blocks put close together, so as to touch each other, the very same weight must be borne to each Block and foundation; in short, however close the Chairs are placed, they must each bear the weight of the wheel when it comes perpendicularly over it. From this it would appear, that if the axles of the carriage be 6 feet apart, the Blocks might be 6 feet apart, without requiring to be larger, or the foundations to be better made.

The axles of the coaches and waggons now in use are

about 6 feet apart, none less than 5 feet, whilst the Blocks are 3 feet; the injurious effect of this arrangement upon the machinery and road, I will now endeavor to show.

It may have been remarked by the Directors, that on some parts of the Liverpool and Manchester Railway, the engines and coaches have, when in full speed, a very considerable swinging motion, which I believe arises from the inequalities in the road. Instead of the surface of the Rails being uniformly smooth, they offer to the carriage wheels a series of inclined planes or waves, and the Blocks immediately opposite to each other not being equally depressed, the carriages work upon the springs, and produce the motion already mentioned. Now, the intensity of this motion will depend upon the quick succession of change in the level of the Blocks, and if one Block be sunk half an inch, and the adjoining one not at all, the Rail will be inclined at the rate of 1 in 72. If, again, the next succeeding Block be not depressed, the engine has again to rise up an inclined plane of 1 in 72. In some instances the opposite Rail is inclined just in the opposite direction, in which case we have the two opposite wheels of an engine, one running down hill, and the other up. This I believe is no exaggerated picture, and it is not confined to the Liverpool and Manchester road; but will occur wherever the bearings are so much shorter than the coupling of the wheels. It was the undulating appearance combined with the motion of the engines, (which I have observed on all the newly constructed Railways,) that first drew my attention to the subject; and I have so far considered it important, as to believe that many of the evils hitherto experienced may be traced to it. The causes producing these effects are obvious. The ballast, as I have before observed, settles unequally. The first settling is assisted by the force with which the engines strike the Rail, and this increases as the Blocks settle lower. The foundations being unequal, some Blocks sink more than others, and at high velocities, the engines, instead of gliding smoothly along the Rail, actually jump from joint to joint, and where the depression is half an inch, will jump 20 inches without touching the Rail. What will be the effect of a blow of a heavy engine under such circumstances? A broken Rail! There seems to me no other way of accounting for the breakage of Rails on the Liverpool and Manchester Railway, than from this supposition. We know that the new 50 lbs. eliptical Rail is stronger in the middle than the parallel, and yet two of these have broken near the middle. This could not be produced by simple pressure. For in the same Rail, afterwards tested, the iron was bent nearly double without breaking. Is this not a proof of the existence of sudden shocks produced by the bounding of the engines? Why have so many Rails been broken in Olive Mount cutting? Because some of the Blocks are resting on the bare unyielding rock, whilst others are upon a thick layer of ballast, which after settling makes the undulations of the Rail more abrupt, and consequently the blows from the engines more effectual.

[*To be continued.*]

RAILROAD MEETING.

An Extract from the Proceedings of a Meeting held at Pekin, Niagara County, New-York.

At a meeting of the citizens of Pekin and vicinity, on the Northern Railroad route from Lockport to the Falls of Niagara, held July 18th, 1835, Silas Belding was called to the Chair, and Jacob Compton chosen Secretary.

A Committee was appointed to draft resolutions expressive of the sense of the meeting, and to communicate with the Directors of said road.

The following resolutions were adopted:

Resolved, That we view the location of the Railroad above named a subject of great vital importance to the inhabitants of the County of Niagara, to the travelling community, to the inhabitants of Lewiston and Pekin, villages situated contiguous to the northern route; also to the inhabitants of Upper Canada, so far as concerns the convenience of travelling, and to those that pass up and down Lake Ontario, arriving at any of the ports west on the Lake, Lewiston, Youngstown, Queenston, or Niagara, passing from thence east; and lastly, to the Stockholders in said Road, whose interests would be materially affected by the loss of all the northern travel,—a circumstance inevitable, from the location of the south route.

Resolved, That in the opinion of the members of this meeting, the northern route would not lose any of the travel from Buffalo, as the distance does not materially differ in the two routes; and the connection with the "Buffalo and Falls Railroad" would be at the Falls, consequently the whole of the Lockport and Niagara Falls Company's road must be used by persons passing from Buffalo to Lockport, to or from; but should the south route be preferable, a junction of the two routes must take place at a point about six miles above the Falls, the two roads from thence running parallel to each other to the Falls. The consequence resulting from this would be, that persons passing from Lockport to Buffalo would leave the road at this point, and take the other and pass on to Buffalo, and vice versa; consequently, about six miles of the road would be left untravelled by all who had not sufficient curiosity to see the Falls to induce them to travel twelve miles of railroad, or business, amounting to the same thing: which class would constitute a large portion of the travellers passing over this road.

Resolved, That we consider that the business of said Road would be greatly increased by the construction of a Branch Railroad from the village of Lewiston to the nearest point on said Road, a distance of about one or two miles; and we are also of opinion, judging from existing feelings on the subject, that the inhabitants of Lewiston and Pekin would not hesitate, if a charter is obtained, to take the stock in said Branch Railroad.

Resolved, That we, the members of this meeting, hereby pledge ourselves, and this Committee also pledge themselves, to take stock in said Branch to the amount of five thousand dollars, for the village of Pekin, provided it is required for us to take that amount; that we feel assured that the stock in said Branch would be good, from the fact that Lewiston is the head of navigation on the American side of Lake Ontario, and destined to be a grand depot for all the commerce of the northern waters, and the point where all the northern travellers, and travel passing through Canada, to and from Michigan and Illinois, (which is very considerable during that part of the season when the Lakes are closed,) would embark in whatever conveyance was offered; and it ought also to be observed, that during the winter season, when all other ferries are closed, or impassable on account of floating ice, this affords a safe passage across the Niagara River, and this is the point where the great mail crosses, more particularly for this reason.

Resolved, That in the opinion of this Committee, should the Railroad be located on the south route, a line of stages would necessarily be kept from Lewiston to Lockport, a distance of about eighteen miles, where different lines are now running, and the roads thronged with stages daily. Lewiston is seven miles below the Niagara Falls, on the Niagara River, and seven miles above Fort Niagara, and is known to be a flourishing village,—the place where the steamboats of Lake Ontario land all their passengers, and receive those destined for the north.

The inhabitants on the Canada side of the Niagara River, in view of the prospect that our Railroad would be constructed on the south route, held a meeting on the subject of constructing a Railroad from Queenston to Chippewa, and determined to break ground within one month. Chippewa is about three miles above the Falls, on the Canada side; the travel would necessarily pass from thence to the places of embarkation on the Canada side of Lake Erie, if going west or south.

Resolved, That in view of the above considerations, and many more that might be presented, we are satisfied that the Directors of said Road ought to be informed on the subject, before they decide on the location. We do not ask that the gentlemen should take the assertions of persons interested, but examine the subject carefully for themselves.

The farmers and landholders on the northern route have nearly all signed off their lands, or given quit-claim deeds, for the benefit of the Company, so that no expense would accrue for lands of much amount. And who that has passed through Niagara County, does not know that the farms on the northern route, being those situated on the Mountain Ridge Road, are in a high state of cultivation? A good share of the ground over which the Road is laid is cleared, and the location the most beautiful for a Railroad that could be imagined, commanding an extensive view at an elevation of more than three hundred feet above Lake Ontario, of which, at many points, you have an extended view.

Presuming that the Directors are in possession of the surveys and estimate of the northern route, as made by the Company's Engineer, John Hopkins, Esq., and with these before them, they can at once be satisfied as to the difference of expense. But to know the difference of advantages, they should know the ground and country for themselves; after being acquainted with which, if gentlemen decide different from our views, we should rest satis-

fied that we had done a duty we owed to our County, the place we represent, and to the Stockholders in said Road.

RAILROAD CONVENTION.—At a Convention composed of delegates from the several counties interested in the construction of the New York and Erie railroad, held at the village of Owego, on the 29th day of July, 1835, on motion of Stephen B. Leonard, Esq. G McDowell was temporarily called to the chair, and Amasa Dana, appointed Secretary.

Chatauque—Alvin Plumb, and Walter smith.

Allegany—John C. Cooley and George Stevens.

Steuben—Ira Davenport, Levi Davis, Paul C. Cook, Benjamin Smead, William Kernan, Franklin Whitney, Z. A. Leland, Thomas A. Johnson and Thomas McBurney.

Tompkins—Ben Johnson, Amasa Dana, David D. Spencer, Minos McGoen, Henry Ackley, J. M. McCormick, John J. Speed, Jr. Francis A. Bloodgood, Samuel Love, E. G. Pelton, Augustus Sherill and Henry Ingersoll.

Tioga—James Pumpelly, George Fisher, John R. Drake, E. S. Sweet, Stephen Strong, Henry McCormick, S. B. Leonard, Jacob Willsey, G. H. Barstow, Elijah Shoemaker, George J. Pumpelly, Thomas Farrington, Charles Cook, Edward Quin, H. W. Jackson, N. T. Wynkoop and J. G. Mc Dowell.

Broome—Martin Hawley, John A. Collier, Virgil Whitney, Mason Whiting, Jonathan Edwards, Joseph S. Bosworth, Wm. M. Waterman, James Hawley and Gideon Hotchkiss.

Oneida—Gardner Tracy, Alvin Stewart, Horatio Seymour, Horace Butler, John H. Ostrom, A. G. Dauby, F. S. Faxton, Philip Thurber, James Sayre and Isaiah Tiffany.

Chenango—John C. Clark, Noah Ely, Augustus C. Welch, Caleb S. Butts, Samuel Medberry and Henry Calhoun.

Otsego—Charles C. Noble.

Greene—Jacob Haight.

Orange—Moses Webb, and Samuel J. Wilkin.

Rockland—J. G. Pierson.

Cattaraugus—James Brooks.

On motion of Mr. Collier, it was resolved, That a Committee, consisting of one member from each county, be appointed by the Chair, to nominate officers for this Convention. The following persons were appointed said committee, viz: Messrs. Tracy, Collier, J. M. McCormick, Welch, Farrington, Haight, Noble, Wilkin, Pierson, Smith, Kernan and Cooley.

The committee nominated WILLIAM KERNAN, of Steuben, as President.

Stephen B. Leonard, of Tioga,
Gardner Tracy, of Oneida,
Walter Smith, of Chatauque,
Augustus C. Welch, of Chenango,
Vice Presidents.

Amasa Dana, of Tompkins,
A. G. Dauby, of Oneida,
Moses Webb, of Orange,
Secretaries,

The report was unanimously accepted by the Convention. On motion of J. C. Clark, Esq.

Resolved, That a committee of twelve be appointed by the President to report resolutions, expressive of the sentiments of this Convention, and that they report to-morrow morning at 9 o'clock. The following persons were appointed said Committee, viz: Messrs. Clark, Dauby, Cooley, Leland, Farrington, Wilkin, B. Johnson, Collier, Noble, Haight, Pierson, Plumb. Adjourned to 9 o'clock to morrow morning.

JULY 20th, 1835.

The Convention met pursuant to adjournment. Mr. Clark, from the committee on resolutions, presented the following, which were unanimously adopted:

Resolved, That we are in favor of a large and liberal system of internal improvements, and being deeply impressed with the great and increasing importance of multiplying facilities of communication between different sections of the state, and of opening convenient channels of intercourse between those states already connected, or which may be connected with us in their business relations by works of internal improvement, and by none, it is believed, can this important object be more advantageously accomplished than by the contemplated Railroad from New York to Lake Erie. Therefore,

Resolved, That reposing as we do confidence in the representations of the Company empowered to accomplish this great and interesting work, we earnestly recommend to the legislature of this State, having satisfied itself of the practicability of the measure, to extend its aid for its completion, by loaning its credit, under proper limitations and restrictions, for such sums as may be considered necessary, upon its receiving such guarantees of security for the same as shall be deemed sufficient to protect the State from loss or injury.

Resolved, That in the opinion of this convention the system which has been adopted and so far prosecuted with great success for the development of the resources and improvements of the condition of this State by the construction of canals and railroads, should be encouraged and persevered in, until the advantages are extended to every part of the State susceptible of such improvement—that to this policy this State is greatly indebted for its present highly prosperous condition, and that the gigantic efforts now making by her southern neighbors to direct the trade of the entire western States from this State into other channels and other regions, call for increased and steady efforts to secure to the citizens of this State a fair and permanent participation in the advantages of that trade.

Resolved, That we deem it hardly necessary to express what would seem to be a sentiment of obvious justice and propriety, to wit: that no work of the character referred to, whether sought to be accomplished by individual means and individual enterprise, or by the resources of the State, should meet with hostility and opposition on local, sectional or party grounds, but should stand or fall on a just veiw of its merits, and of what is required to promote the interest and prosperity of the country, —therefore

Resolved, That while we claim to be actuated by a spirit of enlarged and liberal state policy, in recommending to the favorable consideration of its citizens the New York and Erie Railroad, we feel the utmost confidence in the justice, liberality and patriotism of those not perhaps so directly interested in the construction of this work as the constituents of the members of this convention are, and rely upon their generous and efficient support—thereby securing to the State, beyond the hazard of future contingency, the incalculable benefits of possessing the cheapest and most expeditious communication by which the immense and rapidly augmenting products of the west, can be transported to market.

Resolved, That this Convention will unite and co-operate with its friends in the counties of Columbia, Greene, Schoharie and Otsego, in such suitable measures as they may adopt to promote a communication by Railroad from the eastern bounds of Columbia county to Lake Erie Railroad, in the valley of the Susquehanna.

Resolved, That it be recommended to each county and town interested in these projects to appoint committees to obtain signatures to petitions to the Legislature in furtherance of the object in view.

Resolved, That this Convention, reposing full confidence in the company's intention to immediately commence the work, giving sure pledges of its speedy completion, therefore recommend to the citizens of the several counties for whom stock has been reserved to subscribe for the same.

Resolved, That the Board of Directors are respectfully requested by this Convention to extend, if consistent with their arrangements, the time for closing their subsciption books in the counties on the line of the road, until the first of October next.

The following resolution, passed by the Board of Directors of the New York and Erie Railroad Company, on the 22d July, ult. was read by a member of the Convention:

'Resolved, That this Company will wholly abstain from speculating in or purchasing any lands whatever on the line of their Railroad, (except such as may be requisite for the convenient accommodation of their concerns,) and that they will not, even for those purposes, purchase any lands without previously declaring to the owners thereof, that the application is made in behalf of the Company.'

Whereupon it was unanimously

Resolved, That we highly approve of the resolution of the Directors of the Railroad Company, pledging themselves to abstain from the purchase of real estate on the route; that by foregoing the speculations which their knowledge on the subject would enable them to make, they give to the people an earnest of their public spirit, manifesting sentiments and feelings honorable to themselves and worthy the great measure in which they are engaged.

Resolved, That the following persons be a central Corresponding Committee, viz: James Pumpelly, Jedediah Fay, E. S. Sweet, Thomas Maxwell, G. H. Barstow, John A. Collier, Thomas Farrington, Stephen B. Leonard, Stephen Strong.

Resolved, That the cordial thanks of this Convention be returned to its officers for the dignified, able and impartial manner in which they have discharged the duties imposed upon them.

Resolved, That the proceedings of this Convention be signed by its officers and published.

WILLIAM KERNAN, President.

S. B. LEONARD,
GARDNER TRACY,
WALTER SMITH,
A. C. WELCH,
} Vice Presidents.

AMASA DANA,
A. G. DAUBY,
MOSES WEBB,
} Secretaries.

BALLOONS SUSCEPTIBLE OF DIRECTION.—The following article is curious, and of much promise.

[*Translated for the New York American from the Prussian State Gazette of 18th May.*]

BRUNSWICK, the 11th May.—Much sensation is here created by the experiments of Dr. Weinholf, with air-carriages, whose movement, direction, and stopping, are entirely in his power by a simple contrivance invented by him. The consequences of such an invention, hitherto concealed even to the most searching ingenuity, are immeasureable, and will, in case of success, overthrow many of the now existing relations in commerce, in the military system, nay, in almost all social connexions, and substitute new ones. What enlargements and improvements will be derived from that invention for science, apart from its practical utility, no part of the earth being unattainable or inaccessible to an air-vehicle, and the passage through the air, in itself always the straightest way, never, and nowhere, being subject to any obstruction. Though the experiments tried by the inventor, are but made on a small scale, yet the principles upon which they are founded are so evident, and the contrivances so simple, that their practicability, on a larger scale, and in the actual application, can no longer be doubted. It is gratifying to see the pleasure which the plain, simple man, far from all ostentation, and full of inspiration for his invention, takes in communicating it to others, without concealing any thing. To render his secret a common good, he has determined to make it as public as possible by the press, so that in a few days, the book will lie open for examination; and it is to be expected, from the firm conviction, and the decided sincerity of the inventor, in regard to his experiments and their explanation, that it will open for itself the path which it deserves. The book is to be published here, in Brunswick, by Schure & Muelles, under the title of "Luphschiffahrt uad Maschinenevesen," (the navigation of the air and the system of machinery,) by Dr. Wm. Weinholf. It purports to contain the proof of a new process applied to the movement of machines, carriages, shooting-engines, and projectiles of all kinds, more powerful and advantageous than any hitherto used, and of the greatest importance, because it places at our command, the horizontal direction of the air-balloon, and the ærostatic vehicles, as well as the movement, stopping, and directing of air-vehicles, without any ærostatic aid, in horizontal and vertical directions.

[*From the Chicago American of Aug. 1st.*]

Our town, we are happy to say, is very healthy at present, although the changes of weather have been great, varying in some instances, ten, fifteen, twenty, and sometimes more, degrees in twenty-four hours. So far as we can learn, there have been but three deaths in about as many weeks, two of which were violent—murder and suicide. We make this statement to correct the numerous false reports which are circulating in diffent parts of the east, and which have no doubt been put in circulation by designing persons, to stop the tide of emigration which is now fast filling up this fertile country. So far as we have been able to ascertain, (and we have taken considerable pains to learn) the whole country is now enjoying, in an eminent degree, that greatest of all blessings—health. It is true that the cholera did exist for a few days in some of the towns on the Illinois River, approaching at one time within about 80 miles of us; but it entirely disappeared some weeks since. To emigrants we would say, "*come on.*" We pledge them a hearty welcome, and fair and goodly land—fertile as the banks of the Nile.